Detection of Natural Land use Changes in Shadegan Wetland Before and After the Flood Using Satellite Images and Geographical Information System (GIS)

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Abstract

Wetlands are valuable biological resources and reservoirs for any country that performs special services and functions Shadegan Wetland is one of the purest, most valuable and largest ecosystems in Iran, which has been registered in the Ramsar Convention List due to its special importance and rich nature but recently, due to various natural and human factors, this ecosystem has been exposed to change and destruction. In order to observe the environmental changes caused by different pressures on the wetland, a quantitative measurement of land use changes is felt. The purpose of this paper is to investigate and compare changes in land use coverage in the time before and after the flood using Landsat 8 satellite images and their processing in ENVI 5.3 and Arc GIS 10.5 software environment with the help of supervised classification method in March and September 1998. The results of this study show a decrease,16.29% Water coverage level,2.72% of land, 1.39% vegetation level and increase, 12.59% saline lands and 7.81% Plant cover area of the weter part of the wetland. Recently, the Khuzestan Plain has been one of the most important areas of drought in Iran. One of the effects of drought is the creation of an impermeable layer of dense soil on the ground, which reduces the permeability of the area against rainfall and allows more water to flow in the form of runoff. However, the wetland is in good water conditions in winter 2019 and spring 2019 compared to previous years, However, due to the drought in recent years and the reserves of the wetland's water supply resources have not been in high water conditions for a long time, the water is still not irrigated and the authorities need to pay special attention to this issue and the wetland's water supply, follow up vigorously to prevent the wetland from drying up again and flooding again.

Keywords: Shadegan Wetland, Land Use, Landsat, Satellite Images.